



UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

DMFAS

DEBT MANAGEMENT AND
FINANCIAL ANALYSIS SYSTEM

NEWSLETTER

No. 4 JUNE 1993

The fourth issue of the DMFAS Newsletter brings you a range of articles covering different aspects of debt management. Among others, these include the development of version 5 of the DMFAS (SAGE), activities of UNCTAD and the World Bank under the Joint Programme, the Technical Focus, and a request for information on analysing debt statistics. We hope you enjoy it. As always, any suggestions or comments from our readers are very welcome.



The systems analysis stage for the development of DMFAS Version 5 (SAGE) was completed in April 1993. To wrap up this stage (as at the end of each stage of the system development) a quality assurance review was held, at which the results of the analysis stage were reviewed. The review was attended by the World Bank, selected DMFAS users, and a debt manager from Morocco. Of particular interest to the reviewers was the way in which the new system will handle disbursements and debt service. The design stage has now been initiated.

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World Bank/UNCTAD Joint Programme activities

The World Bank participated in the quality assurance review which wrapped up the systems analysis stage in the development of DMFAS Version 5. Other joint activities included a meeting of the Steering Committee in February (at which UNDP, UNCTAD and the World Bank monitor the development of the Joint Programme between UNCTAD and the World Bank), and a joint needs assessment mission to Argentina in March 1993.

During the first half of this year, significant progress has been made in the further development and implementation of the so-called Regional Capacity Building Initiative in Debt and Reserves Management for Anglophone countries of Southern and Eastern Africa, sponsored by the World Bank and UNDP.

A Workshop was held at Kadoma, Zimbabwe from February 21 to 26, 1993 with representatives of 26 Ministries of Finance and Central Banks from 11 countries. The major objective of the workshop was to undertake an assessment of capacity building requirements in debt management and how to address them. A final regional project proposal will be presented to the Steering Group of the Initiative, composed of Central Bank Governors and Permanent/Principal Secretaries of Ministries of Finance of the region, and to cooperating partners at a meeting scheduled in June.

UNCTAD will continue to support this initiative, which is sponsored by the World Bank and UNDP within the framework of the Joint Programme of these three agencies. It is hoped that funding will be made available by multilateral and bilateral donors so that UNCTAD as well as other providers of technical cooperation services, can supply the required products and services.

This initiative is the first regional undertaking within the framework of the Joint Programme. Other regional programmes are scheduled for West Africa, Central America and the CIS-countries. They will support the use of computer-based debt management systems, such as the DMFAS, provide training and advisory services in debt management, and promote networking among debt managers in the region concerned.

SEMINAR NEWS

Seminar on debt management in Damascus

In April 1993, an UNCTAD representative attended a seminar on debt management, which was jointly organised by the Islamic Research and Training Institute of the Islamic Development Bank (IRTI/ISDB), the Syrian Ministry of Finance and Foreign Trade and the Syrian Central Bank. It was attended by senior officials dealing with external debt in several Arab countries. The Cabinet Information and Decision Support Center (IDSC) from Egypt also assisted in organising the seminar. Lectures covered the causes and concept of external borrowing, the institutional framework for external debt management, the effect of debt on investment and the relation between exchange rate fluctuations and debt, debt monitoring systems, and methods of debt management and borrowing strategy and debt projection. The UNCTAD representative delivered a lecture on effective debt management and made a brief demonstration of the DMFAS, in particular the DMS.

The Islamic Development Bank is planning to offer a seminar on debt management in the second half of 1993.

UNCTAD co-sponsors regional seminar on debt conversion in Tegucigalpa, Honduras

The first regional seminar on debt conversion was convened in Tegucigalpa, Honduras from 19 to 21 May 1993. It was organised by UNCTAD, SELA and UNDP, and was hosted by the Government of Honduras. The seminar was attended by 45 participants from 22 Latin American and Caribbean countries, representing for the most part senior policy makers from Central Banks. Some eleven international and regional institutions, including NGOs and one creditor country, also attended.

The seminar was dedicated to the examination of country experiences with commercial and official debt conversions, and ways and means to encourage such deals, especially with regard to official bilateral debt. An important outcome was an offer by the Government of Ecuador to host a high-level consultative meeting between Paris Club creditors and Latin American debtor countries in November 1993, in Quito.

TECHNICAL FOCUS

1. DMFAS 4.1PLUS UNDER WINDOWS 3.1

Although the DMFAS 4.1Plus is not a Windows program, it is possible to run it in a DOS window under Windows. You will not be able to use a mouse in the DMFAS program, but you can easily switch between DMFAS and Windows programs. To do this, you have to make two changes, because 1) Windows has its own environment space and 2) the PIB (that sets the environment variables) will not run correctly under Windows. Use SPFPFC or another editor to change/create the files mentioned below.

1) Increase Windows' DOS environment space

In your CONFIG.SYS line you will see the following line (the number after E: may vary):

```
SHELL=C:\DOS\COMMAND.COM /E:3072 /P
```

This line increases the DOS environment to 3072 bytes (characters), and is necessary to make enough space for the variables created by the PIB program. But since Windows has its own environment, you will also have to increase the Windows' DOS environment. This can be done by inserting the following line in the [NonWindowsApp] section in the SYSTEM.INI file found in the Windows directory (if a [NonWindowsApp] section does not exist, you will also have to type that line). The change will take effect after restarting Windows.

```
[NonWindowsApp]  
CommandEnvSize=3072
```

2) Run PIB before starting Windows

Since the PIB.EXE file does not work correctly when run under Windows, the easiest way to get around this problem is to run PIB before entering Windows. This can be done by typing **PIB C: A:** before entering Windows, or by creating the following WIN.BAT file that does it:

```
C:\BATFILES\PIB C: A:  
C:\WINDOWS\WIN  
C:\BATFILES\PIBOFF
```

It is important that this batch-file is placed in a directory that appears before the Windows directory in the PATH to avoid the WIN.COM file being executed instead of your WIN.BAT file (check your AUTOEXEC.BAT file to see the order of directories in your PATH line). Now all you have to do is to install an icon for the DMFAS program in the Program Manager. This can either be done by having Program Manager and File Manager side by side, and dragging the DM.BAT file into Program Manager, or by choosing New and Program Item from the File menu in Program

Manager (see your Windows manual for further explanation).

NB! When you use the Print Screen key under Windows, the screen will be copied to the Windows clipboard file instead of being sent to the printer as under DOS. If you want to do a Print Screen when you run DMFAS under Windows, press Print Screen, enter a Windows program (e.g. Write), choose Paste from the Edit menu to paste your screen into a document and choose Print from the File menu to print it to a printer.



2. VIRUSES

In the last seven months we have found PC viruses on PCs or diskettes in five countries, and we have therefore included a section about PC viruses in the newsletter. A PC virus is a small program with certain features;

1) All viruses have the ability to reproduce themselves automatically. When you run a program with a virus, the virus can copy itself to another program (e.g. a word processor). You also have viruses that do not infect programs, but stay in the boot sector on a diskette or a hard disk. This type of virus can infect your hard disk from a diskette as soon as you access the diskette, for example by typing DIR A:.

2) While some viruses are "satisfied" with reproducing themselves without doing much harm, other viruses have "missions" which make them dangerous. These missions can be quite harmless, such as, for example, "playing a Christmas song if the program containing the virus is started on the 25 of December", but also destructive such as "deleting one random selected file on the hard disk" or even "destroy the contents of the boot sector" so you will not be able to access your data at all.

There are several ways to prevent virus attacks. Some good rules are: Always write-protect your originals; never leave a diskette in your A: drive when you (re)start your PC; do not use diskettes which you have "borrowed" and avoid using the

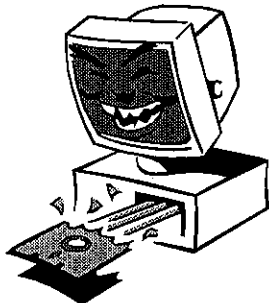
same diskettes on different PCs without checking them first.

The best way of preventing virus attacks is to always use originals. Use virus protection programs for finding and removing viruses. One way of protecting your PC is to have a resident virus detector. This detector could be loaded from the AUTOEXEC.BAT file, and therefore be active all the time the PC is on. The detector would **automatically** check the diskettes and programs **accessed** during a PC session. Another possibility is having some sort of a virus scanner, that goes through all the files on a directory, hard disk or diskette. This program carries out more thorough checks, but it may take a long time to run, and does not check for viruses in the background as a resident virus detector does. Some of the scanning programs also remove viruses, while others only tell where and what kind of virus it finds. In the last case, you will also need a program that removes the virus.

On the DMCONFIG diskette that we have sent to all our users, there is a virus directory where you will find virus programs, documentation and description of different viruses. These programs are shareware programs, so if you find them useful and want to install them, you should pay a fee to McAfee Associates in USA.

3. DMCONFIG, CHECKS THE PC CONFIGURATION AND VIRUSES

With the DMFAS update no 1, 1 March, we also sent the DMCONFIG diskette. We will again remind you that this is a very useful tool for checking the PC. If problems occur, run the DMCONFIG program from this diskette, and print the report. From this report you might find the problem yourself, or you could fax it to us for consultation. Run this program regularly to check your PCs for viruses.



4. DOS 6.0

In April 1993, Microsoft released its new version of DOS. Here is a list of some of the features in the new version.

Disk Doubling

With a compression technique users will have an option of virtually doubling their hard disk space. This is done by automatically compressing all files saved on the hard disk. How much more disk space you gain, depends on what kind of files you have on your hard disk. Data files (like GDB and FDB files) will be compressed to about one fifth of original size, while the DB???.EXE files is compressed to about 75% of their original sizes. NB! some programs (like Norton utilities) are not yet compatible with this disk doubling feature and may corrupt files.

Back-up program

Microsoft has a licence agreement with Symantec to include a subset of its backup program in its new version. Features like compression of data and backup of changed files are included.

Disk defragmentation

Microsoft also has a licence agreement with Symantec to include a version of its compress-program in version 6.0.

Virus protection

There is also a virus protection program (a subset of Central Point antivirus program) with the new version of DOS. As new viruses are discovered, it will be possible to upgrade the virus protection program to search and remove them.

Memory management

MEMMAKER is a program that automatically sets up your AUTOEXEC.BAT file and CONFIG.SYS file to gain as much conventional memory as possible.

New commands

Several commands have been improved, and a few commands have been added. With DELTREE you can delete a directory tree with several subdirectories and files with one command. With MOVE you can move files from one directory to another.

5. MEMORY MANAGEMENT (DOS 5.0)

Even if your PC has several Mbs of memory, most DOS programs will only be able to use the first 640 kilo bytes (the so-called conventional memory). To run all the modules of DMFAS version 4.1Plus you need 574 Kb of free conventional memory, and it is sometimes tricky to set up the computer the right way to obtain that. However, if you have a 286 PC or better with more than 1 Mb of memory and DOS 5.0 (or newer), there are ways of moving some resident programs from the conventional to the upper memory area (between 640 Kb and 1024 Kb) and the high memory area (between 1024 Kb and 1088 Kb), and that way create more free conventional memory for DOS programs. To find out how much memory you have, type the DOS command MEM.

Tuning your memory is done by changing the AUTOEXEC.BAT and CONFIG.SYS files as described below. Before you start, create a bootable diskette (insert an empty diskette in your A: drive and format it with FORMAT A: /S) and copy your old AUTOEXEC.BAT and CONFIG.SYS files to a diskette in case you make a mistake during the memory "tuning".

1) A 286 PC with more than 1 Mb of memory. Insert the following lines on the top of your CONFIG.SYS file to load the COMMAND.COM to the High Memory Area instead of the Conventional Memory.

```
DEVICE=C:\DOS\HIMEM.SYS
DOS=HIGH
```

2) A 386 PC with more than 1 MB of memory Insert the following line on the top of your CONFIG.SYS file (if you have DOS 5.0 and Windows 3.1, type WINDOWS instead of DOS in the two first lines below to use the newer HIMEM.SYS and EMM386.EXE from Windows instead of DOS).

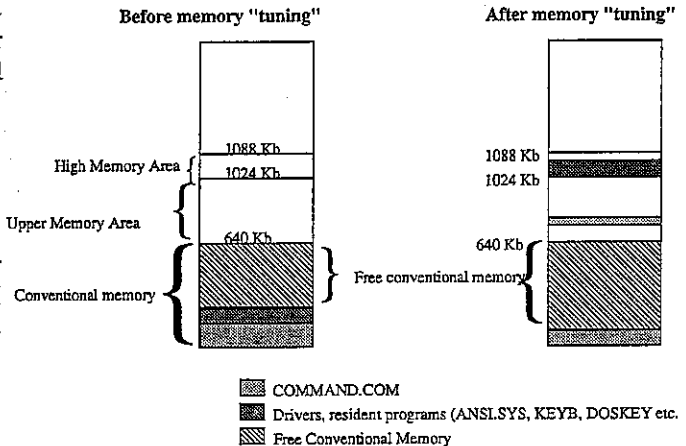
```
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE
DOS=UMB
DOS=HIGH
```

Line 4 will load the COMMAND.COM to the High Memory Area instead of the Conventional Memory, and line 2 and 3 will enable you to load resident programs and drivers into the Upper Memory Area. Then change all DEVICE commands to DEVICEHIGH in your CONFIG.

SYS file, e.g. DEVICEHIGH=C:\DOS\ANSI.SYS, and in the AUTOEXEC.BAT file you can insert LOADHIGH (or LH) in front of the lines starting the resident programs, e.g. LH C:\DOS\KEYB FR.

After you have tuned the memory, reboot the PC and type the DOS command MEM to see the effect. If you type MEM/C|MORE you will also see which programs have been moved to Upper Memory Area, and the message "MS-DOS resident in High Memory Area" if you have loaded DOS high with DOS=HIGH in the CONFIG.SYS file.

With a 386 or 486 PC with more than 1 Mb of memory, you can gain more than 620 Kb free conventional memory by changing your CONFIG.SYS and AUTOEXEC.BAT files. For more information please consult your DOS manual.



6. DISKETTES WITH CORRECT FORMAT

From time to time we get diskettes from you which seem to be unreadable. In some cases this is because the diskettes have an incorrect format. High Density (HD) diskettes are of a better quality than Double Density (DD) diskettes, and can therefore contain more data. Some users still format DD diskettes as if they were HD diskettes to be able to store more data, but that is a dangerous habit. Most PCs will not be able to read them afterwards, and even worse, there is a good chance of getting corrupt files on these diskettes. Below you will find a table showing how to format the different types of diskettes. If you do not know what kind of DOS version you are running, type the DOS command VER to find out.

Disk size		High Density (HD)	Double Density (DD)
5 1/4"	Capacity Characteristics Command (with DOS 4.0 or higher) Command (with DOS 3.3 or lower)	1.2 Mb No ring around the hole FORMAT A: FORMAT A:	360 Kb Ring around the hole FORMAT A: /F:360 FORMAT A: /T:40 /N:9
3 1/2"	Capacity Characteristics Command (with DOS 4.0 or higher) Command (with DOS 3.3 or lower)	1.44 Mb A hole in upper left corner FORMAT A: FORMAT A:	720 Kb No hole in upper left corner FORMAT /F:720 FORMAT A: /T:80 /N:9

HOW TO HANDLE CURRENCY POOL LOANS IN THE DMFAS

The purpose of the World Bank's currency pool is to equalize among all borrowers at any time the risks inherent in fluctuations in the exchange rates of the currencies disbursed and repayable on all Bank loans included in the currency pool system. Equalization is achieved by pooling all currencies disbursed and outstanding on participating loans and by expressing the outstanding principal amount of each such loan as a share of the pool. As a result, debt service obligations on each participating loan are related to all amounts in the various currencies disbursed and outstanding on all loans in the system. In practice, only five currencies are used. Debt service obligations on loans by the Asian Development Bank and Interamerican Development Bank are also treated in this manner.

Normally, when entering debt service transactions into the DMFAS ledger, the amount of the payment is checked against the estimated amount in the theoretical schedule. If the amount entered exceeds the amount scheduled, the corresponding error message is displayed and data entry is rejected. For ADB, IBRD and IDB loans in the currency pool system it is necessary to have the possibility to exceed the amount scheduled. For these loans, the client with relation code 20 (= creditor/main creditor) must be registered on the **list of clients using the currency pool** and the **repayment currency code** has to be 981.

How to update the list of clients using currency pool

Select LOAN MONITORING>SYSTEM ADMINISTRATION>UPDATE REFERENCE FILES>IDENTIFY CLIENTS USING CURRENCY POOL

Select function Add
Enter the client number

How to change the repayment currency

Select LOAN MONITORING>DATA ENTRY>GENERAL INFORMATION>LOAN CHARACTERISTICS

Change currency of repayment to 981
Select function Change.

TIP OF THE MONTH

The World Bank has a video which explains how to work with the currency pool and with variable lending rates. Those interested in purchasing this video



should contact The World Bank, External Affairs Department, Film and Video Unit, 1818 H Street, N.W., Washington, D.C. 20433, USA.

WHAT YOU NEED FOR A SUCCESSFUL INSTALLATION OF A CBDMS

Computer-based debt management systems (CBDMS) have been in existence for over a decade now. Experience with the installation and use of these systems has been mixed. Why?

It is easier to design and implement a CBDMS in a country where the debt database is not very complicated. Some countries have databases containing many loans subject to some sort of currency pooling system, e.g. World Bank, Asian Development Bank. Dealing with these types of loans is not straightforward. In addition, in some countries the Government has assumed the debt from para-statals and the private sector - getting the necessary data for this subset of the debt has proven to be very difficult. Further, multiple reschedulings can cause complications.

An effective debt management system requires *well defined institutional arrangements*. These include adequate legal authority and an appropriate administrative framework. This will ensure clearly defined functions and responsibilities. The unit in which the CBDMS is installed must have the authority to collect data in a timely and consistent manner, and the responsibility to disseminate relevant information to all participants in the debt management process. In general, the necessary structures have not been present in many countries in which CBDMS have been introduced. It is very useful to have the framework established before the CBDMS is put in place, but this can also be done during the process of getting a CBDMS up and running.

Strong commitment from senior officials during and after installation is another key factor, as is a *stable, well-motivated, and well-trained staff*. There has often been a lot of rotation of staff in the debt office where a CBDMS has been installed. Many factors account for this: poor remuneration, no recognition from senior officials, inadequate office space, equipment, etc. One of the consequences is that some of those who have received training on the CBDMS move on to greener pastures. Some governments also have a policy of rotating staff on a routine basis.

The *unit* in which the CBDMS is installed is also an important factor. Generally, it is located in a unit in the Ministry of Finance or the Central Bank. In a country in which the debt is owed mainly by the Government and/or the parastatals, or even in which the Government has guaranteed a large proportion

of the debt, the CBDMS can be located in the Ministry of Finance. Alternatively, in a country with a large private sector and/or non-government guaranteed debt, the debt office can be located in the Central Bank. The decision to locate in one or the other should also be a function of the purpose for which the CBDMS is required, the institutional and administrative arrangements, and the resources available in the different prospective locations. Unfortunately, in some situations, the CBDMS has been installed in locations which do not allow for maximum benefits to be derived from the system.

Technical support is another important factor. Generally, advisors assigned to manage the installations have to be very specialized; he/she should have in-depth knowledge of the CBDMS as well as be very familiar with the general practices and operations of units involved in debt management, as well as creditor practices.

Where the CBDMS is a standard system (designed centrally and implemented in different countries), *timely and adequate response from the designers* in the event of problems developing or to legitimate queries or requests is also a significant factor.

There are other factors which affect the effective installation of a CBDMS, such as *expectations from the system, adequate hardware/software maintenance and security and technical details* such as the setting of a cut-off date. However, a CBDMS does not equal an efficient debt management. It can only be one link in an overall system.

This article was contributed by a DMFAS Chief Technical Adviser working in the field.

Request for information

At the suggestion of debt managers at the workshop under the African capacity-building initiative held in February 1993 (see page 2) we think it would be useful for us to include in the DMFAS Newsletter a series of articles on the analysis of debt statistics. We have written directly to several DMFAS users involved in such work to ask them to provide information, and their responses will be included in future issues. We would also be very pleased to hear from any other of our readers on this subject. Topics that seem to be of interest include how debt data is integrated with foreign exchange management, and what analysis is of use in policy-making, etc.

BOOK REVIEWS

World Debt Tables 1992-93

The pattern of external resource flows to developing countries has changed significantly in recent years, according to the World Debt Tables 1992-93, published by the World Bank, Washington, December 1992.

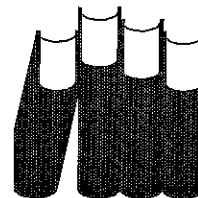
In a number of middle-income countries, private resource flows are playing a much bigger role and within these flows there has been a shift from debt to equity financing - comprising foreign direct and portfolio equity investments - and from bank to non-bank sources. The upturn in private flows is the primary factor underlying the 130 percent increase over the past three years in aggregate net resource flows to middle-income developing countries, to a projected level of \$89 billion in 1992.

In contrast, low-income developing countries - and particularly those which are severely indebted - remain heavily dependent on official sources to help finance their development projects and economic adjustment efforts. Few of these countries have benefitted from the recent resurgence of private capital flows and the overall level of aggregate net flows to this group of countries is expected to remain broadly unchanged in 1992 at about \$44 billion.

For the developing countries as a whole, aggregate net resource flows - comprising debt, equity and grants - increased in 1992 by 17 percent over the previous year, to reach \$134 billion, with foreign direct investment and portfolio investment registering the sharpest increases.

The external debt of all developing countries is expected to reach \$1.7 trillion by the end of 1992, up nearly \$100 billion from a year earlier. During the year, reduction of debt stocks through debt restructuring and reduction was more than offset by substantial new net lending and changes in exchange rates. However, indebtedness ratios are expected to remain unchanged as the growth in developing country exports and output has paralleled the increase in debt stocks.

Latin America and the Caribbean experienced a surge in private-source capital inflows in 1992, stemming from improved economic policies and the catalytic effects of commercial debt reduction agreements for many countries in the region.



East Asia and the Pacific continued to enjoy excellent market access, thanks to high credit-worthiness, and also attracted increasing foreign direct investment, signalling investor confidence in private-sector prospects for Pacific Asia.

South Asia is dependent primarily on official flows, but there has been some improvement in prospects for attracting private finances, due in part to regulatory change.

North Africa and the Middle East is projected to see some increase in foreign direct investment, following a stagnation of capital flows in 1991. Official concessional finance remains an important component of external financing.

Sub-Saharan Africa continues to rely heavily on concessional official financing and net flows and net transfers are very large, relative to GNP. Nevertheless, for some of the most severely indebted countries, debt servicing remains unsustainably high in relation to export earnings and GNP.

Europe and Central Asia is dominated by developments in the Former Soviet Union, which is included for the first time in the aggregate statistics of World Debt Tables. Due to deferral agreements reached by the FSU and its creditors on debt service, net flows and transfers improved significantly in 1992 for the region as a whole. Net flows are expected to rise for other countries in the region, though at a more moderate rate.

While the debt crisis that began ten years ago is largely over for commercial banks and many (though not all) of their middle-income borrowers, the report observes, external viability remains elusive for many low- and lower-middle income developing countries, most of whose debt is owed to official bilateral creditors.

Although strong official support has provided much needed cash-flow relief to these countries, additional debt forgiveness will be necessary for many of them, if they are to reduce their currently unsustainable debt burdens.

The report cautions against complacency in the financing outlook for developing countries, arguing that the access to private flows is still fragile and that the need to manage them effectively has grown even greater. "Increased world financial integration implies low tolerance for misguided policies," the report warns, even as it points to a number of differences which set the current resumption of private capital flows apart from the period leading up to the debt crisis.

The most important among them include, in many developing countries, policy reforms which have produced improved fiscal performance, outward trade orientation and a stronger role for the private sector. The investor base broadened and assessment of investment risks has improved through greater availability of information. All these offer better opportunities for investment of external resources than existed in the 1970s or 1980s.

(This article is adapted from the World Bank's Press Release on the World Debt Tables)

The World Debt Tables 1992-93 are available from The World Bank, 1818 H Street, N.W., Washington, D.C. 20433, U.S.A.

MISSIONS OF DMFAS TEAM MEMBERS

January 1993 - June 1993



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New York, USA (June), Bangladesh (June)

Fedra Dell'Aquila

Argentina (March)

Manno Jamsen

Bangladesh (June)

Sarah Ross

Washington DC, USA (February), London (February),
New York (June)

Dagfinn Vaksvik

Djibouti (January)

Mark Willis

Bangladesh (June)

Good Debt Management Pays

UNITAR training programmes in the legal aspects of debt management.

The UNITAR Geneva office has published a brochure called 'Debt Management Pays', which contains a summary of lectures at the national awareness seminars for senior officers on management of external debt held in Dar es Salaam and Kampala in 1990. The compilation contains summaries of presentations made by various UNITAR resource persons having extensive theoretical and practical experience in the field of debt management. Topics include *External debt, public finance, and the balance of payments* by Jocelyn Horne, *External debt and the development process* by Ishrat Husain, *Requirements for effective debt management* by Nihal Kappagoda, and *Legal aspects of external debt management* by Professor Rolf Knieper.

UNITAR's training programme in the field of debt management seeks to provide training in legal aspects of debt management in countries of Sub-Saharan Africa and Asia and the Pacific. A range of sensitization workshops, sub-regional seminars and national follow-up workshops have already been held, and further activities will be continued in the participating countries to sensitize and/or train senior officers, middle-level managers, economists, law professors and lawyers in the legal aspects of debt management. This programme is implemented with a view to establishing facilities in selected countries for providing training on a continuing basis, nationally and sub-regionally.

Good Debt Management is available from the UNITAR European Office, Palais des Nations, CH-1211 Geneva 10, Switzerland



THE DMFAS IN TWO COUNTRIES

This article takes a look at the experience of UNCTAD's technical assistance in debt management in two different countries.

In some countries, installing a computerised system is not the central focus of the technical assistance provided by UNCTAD. Often, problems that countries encounter when monitoring their loans stem from organisational difficulties. Loan contracts are not kept in one place, institutions do not communicate with one another, staff is constantly replaced. However, this was not the case in the biggest DMFAS project so far, in a country we shall refer to as Atlantis. All information on external debt was already centralised in the statistical unit of the Central Bank. But the number of loans was so large that the information could not be handled manually or with simple software tools.

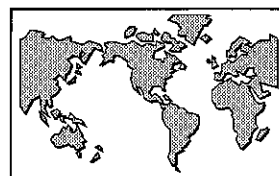
When Atlantis approached UNCTAD for help in recording and monitoring its external debt, the DMFAS was in its early stages. The project offered UNCTAD a real opportunity to see how the system coped with such a huge loan database. When the project began, the unit was managing about 5,000 loans which generated over 20,000 schedules. The DMFAS version 2 was installed, and the loans registered. However, due to the size of the database, it took several days to calculate all the amortization tables for the loans. The computer had to be left to calculate undisturbed, and if a power cut happened, the whole process had to be started again.

The project also turned out to be more complex and costly than initially anticipated by UNCTAD. Various bugs and gaps in the software were identified, and UNCTAD had to resolve these. In addition, Atlantis had some very specific requirements for reports and management processes, and these had to be incorporated into the system. As a result, a completely separate 'Atlantis' module was developed. This left UNCTAD with the dilemma of having two separate systems. In 1988 it was decided to incorporate the Atlantis module into the DMFAS, resulting in version 4 of the system. Several members of the DMFAS team spent most of the summer in Atlantis installing version 4 and configuring it for the users' needs, who were satisfied by the end of the mission that the new version responded fully to their needs.

Future versions of the system have taken into account the experience in Atlantis, an experience that was mirrored in other countries with smaller loan databases. For example, DMFAS version 4.1 permits

very rapid calculations. Instead of days being needed to generate amortization tables, one thousand of these tables, comprising an average of thirty principal and interest instalments, may be calculated in approximately three minutes on a 386 computer running at 33 MHz. (Incidentally, one DMFAS user was so pleased with the rapidity of version 4 when he first saw it that he cried: 'It's a miracle!', the kind of reaction that all of us who work in technical co-operation appreciate).

Atlantis provides an example of a country's needs defining the future development of the technical assistance offered. It was thanks to Atlantis that the rescheduling module of the DMFAS was developed, since, after its first visit to the Paris Club in 1990, Atlantis had a huge number of reorganised loans and transactions to register. After the recent Paris Club rescheduling in 1992 UNCTAD has been helping Atlantis to register the extremely complicated agreements that arose from this rescheduling, an assistance that will also benefit other countries using the DMFAS.



In the late 1980s UNCTAD and ECLAC collaborated to provide technical assistance in debt management to a small group of countries. The situation in these countries was roughly similar and it was felt that the most effective way to deliver assistance was on a regional basis.

Providencia (as we will call one of the countries in the region) had no central debt unit in the early 1980s, but it had started developing a computerised system to manage its external debt. This system worked in the national currency, and solved some of the immediate debt management needs. However, debt got more and more complicated and difficult to manage. The aim of the regional project, which started in 1988, was not just to instal the DMFAS in the five countries, but also to improve the institutional context in which debt management was performed. Each country was to set up a national debt office in the main institution that managed debt. In Providencia, it was decided to set up the national debt office in the Ministry of Finance,

because the details of loans and most transactions were channelled via the Ministry of Finance.

Three training seminars were held under the regional project. The first, in June 1988, covered mainly conceptual issues - how to treat loan contracts for example. Providencia centralised its debt information, gathered its loan contracts, and prepared for installation of the DMFAS. Between the next two training seminars concern arose that using the DMFAS made Providencia very dependent on UNCTAD, and UNCTAD was a long way away. What would happen when the regional project ended? The authorities took a few decisions - they would continue with the DMFAS, but at the same time they would continue to develop the national system.

The last training seminar under the regional project was held in 1991, and the countries were provided with version 4 of the DMFAS. As in Atlantis, the great improvements included in this version were a real response to the countries' needs and to the perceived weaknesses in former versions of the system.

The next few years saw the DMFAS gradually establishing itself in Providencia. The main problem still remained the relative lack of support from UNCTAD. With no regional project now in place, and a follow-up project not implemented due to lack of funds, UNCTAD was not able to provide the presence in the region, for technical backstopping or

training, that it would have liked to. But, on the plus side, Providencia went for the first time to the Paris Club (in 1990) and the DMFAS proved its worth in providing figures for the Club and for the bilateral negotiations that followed. Then in 1991/92 the exchange rate was liberalised. The national system, which worked in the local currency with a static exchange rate, was not able to cope. The DMFAS began to play a more important role - providing information to the parastatals, to the Central Bank for its reporting to the World Bank's Debtor Reporting System, to the IMF. By 1992, it was clear to the authorities that it was worth paying for three people to attend the training seminar in Geneva which coincided with the release of version 4.1Plus of the system.

One of the useful lessons from the experience of Providencia is that, to sustain momentum after the end of a project, regional capacity has to be built, both in system support and training. The person who was originally trained in the DMFAS under the regional project in Providencia now provides training to staff in other institutions as well as his own.

In September 1994, under the Joint Programme, UNCTAD will be releasing version 5 of the DMFAS, a version that will build not only on the huge advances made in computer technology, but on the lessons learnt over the last ten years from DMFAS users in countries around the world.

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As you know, all DMFAS users can ring or fax the DMFAS team in Geneva if they have a problem.

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